CLAIMS

what is claimed is:

- 1. An anti-fuse structure comprising:
 - a substrate having formed therein a contact region;
- a metal silicide layer formed over and electrically connected with the contact region;
- a first doped polysilicon layer formed upon the metal silicide layer;
- an anti-fuse material layer formed upon the first doped polysilicon layer; and
- a second doped polysilicon layer formed upon the anti-fuse material layer.
- 2. The anti-fuse structure of claim 1 wherein the metal silicide layer is formed from a metal selected from the group consisting of titanium, tungsten, cobalt, nickel, platinum, vanadium and molybdenum metals.
- 3. The anti-fuse structure of claim 1 wherein the anti-fuse material layer is formed from an anti-fuse material selected from the group consisting of amorphous silicon materials, amorphous carbon materials and dielectric materials.
- 4. The anti-fuse structure of claim 1 wherein a doped polysilicon layer is not formed interposed between the contact region and the metal silicide layer.

- 5. The anti-fuse structure of claim 1 further comprising a barrier layer formed interposed between the contact region and the metal silicide layer and contacting the metal silicide layer.
- 6. An anti-fuse structure comprising:
 - a substrate having formed therein a contact region;
- a metal silicide layer formed over and electrically connected with the contact region;
- a first doped polysilicon layer of a first polarity formed upon the metal silicide layer;
- an anti-fuse material layer formed upon the first doped polysilicon layer; and
- a second doped polysilicon layer of a second polarity opposite the first polarity formed upon the anti-fuse material layer.
- 7. The anti-fuse structure of claim 6 wherein the metal silicide layer is formed from a metal selected from the group consisting of titanium, tungsten, cobalt, nickel, platinum, vanadium and molybdenum metals.
- 8. The anti-fuse structure of claim 6 wherein the anti-fuse material layer is formed from an anti-fuse material selected from the group consisting of amorphous silicon materials, amorphous carbon materials and dielectric materials.
- 9. The anti-fuse structure of claim 6 wherein a doped polysilicon layer is not formed interposed between the contact region and the metal silicide layer.

- 10. The anti-fuse structure of claim 6 further comprising a barrier layer formed interposed between the contact region and the metal silicide layer and contacting the metal silicide layer.
- 11. A method for forming an anti-fuse structure comprising: providing a substrate having formed therein a contact region;

forming a metal silicide layer over and electrically connected with the contact region;

forming a first doped polysilicon layer upon the metal silicide layer;

forming an anti-fuse material layer upon the first doped polysilicon layer; and

forming a second doped polysilicon layer upon the anti-fuse material layer.

- 12. The method of claim 11 wherein the metal silicide layer is formed from a metal selected from the group consisting of titanium, tungsten, cobalt, nickel, platinum, vanadium and molybdenum metals.
- 13. The method of claim 11 wherein the anti-fuse material layer is formed from an anti-fuse material selected from the group consisting of amorphous silicon materials, amorphous carbon materials and dielectric materials.
- 14. The method of claim 11 wherein a doped polysilicon layer is not formed interposed between the contact region and the metal silicide layer.

- 15. The method of claim 11 further comprising forming a barrier layer interposed between the contact region and the metal silicide layer and contacting the metal silicide layer.
- 16. A method for forming an anti-fuse structure comprising: providing a substrate having formed therein a contact region;

forming a metal silicide layer over and electrically connected with the contact region;

forming a first doped polysilicon layer of a first polarity upon the metal silicide layer;

forming an anti-fuse material layer upon the first doped polysilicon layer; and

forming a second doped polysilicon layer of a second polarity opposite the first polarity upon the anti-fuse material layer.

- 17. The method of claim 16 wherein the metal silicide layer is formed from a metal selected from the group consisting of titanium, tungsten, cobalt, nickel, platinum, vanadium and molybdenum metals.
- 18. The method of claim 16 wherein the anti-fuse material layer is formed from an anti-fuse material selected from the group consisting of amorphous silicon materials, amorphous carbon materials and dielectric materials.

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- 19. The method of claim 16 wherein a doped polysilicon layer is not formed interposed between the contact region and the metal silicide layer.
- 20. The method of claim 16 further comprising forming a barrier layer interposed between the contact region and the metal silicide layer and contacting the metal silicide layer.